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worked up and better known and yet its presentation in this work leaves much to be desired. The author's discussion of the zoological significance of the term "Worms" is hardly on a level scientifically speaking with the work in other sections of the book. Furthermore it has no particular place in a treatise of this character where the parasitic organisms related to human diseases are the only ones under consideration. These are easily classified in certain generally recognized branches or subdivisions of other rank; they can be reasonably clearly defined without a discussion or even mention of those groups of uncertain relationships that make the subdivision of "worms" so difficult to handle. The introduction of this material serves also to confuse the student of health problems for it can hardly be intelligently handled by any one without considerable technical training in zoology. The general discussion of the significance of the parasites in this group is clearly inferior to that which has been printed in recent works like Braun or Fantham, Stephens and Theobald. The treatment of the separate subdivisions of this topic, while interesting and fairly complete, has not reached the standard set by the author in the first section of the work.

Part III. of the book is devoted to the Arthropods. After an introduction covering general features chapters are devoted to mites, ticks, bedbugs and their allies, lice, fleas, mosquitos and other blood-sucking flies, fly maggots and myiasis. The importance of these forms as agents in the transmission of diseases and their relations to specific maladies are clearly presented. The work will be a most convenient compendium despite the appearance of several recent more comprehensive works on medical entomology that cover in fact the same field as this section of Dr. Chandler's book.

It is difficult to agree with the author in his total elimination of references to those investigators who are responsible for the work outlined in the various parts of his book. While it may be true that extended references to original sources are out of place in so brief

a presentation as his, yet it does injustice to the student if to no one else, that the author should present even a brief statement of the problem without any indication of the place in which the student interested can follow up the subject. I should not neglect to state that the author has included at the close of his book six pages of general references under the heading "Sources of Information." The list is very short and by virtue of the contractions employed might be difficult for some persons to use, while at the same time it is certainly unattractive in appearance on that account. Furthermore, there is no indication whatever of the significance of individual items beyond that contained in a very general subheading. In the opinion of the reviewer such a list is of very little use to the general student, and the same amount of space devoted to a citation of the major sources of information would have been of real value if the items had in one way or another been brought into definite connection with the specific discussions of the text.

The author's figures are not always particularly happy and some of them, such as Figs. 13 and 109, are little more than caricatures. It is difficult to believe that as good a scientific investigator as Dr. Chandler should have prepared a drawing like that represented in Fig. 120, where the size of the young trichinæ in the muscle fibers is apparently radically unlike the conditions as reported by many competent observers. Some of these little defects may be due to the rapidity with which the work was prepared. It is to be hoped that they can be corrected in a later edition. Many persons will find the book both interesting and useful, for it covers the field in a way not otherwise available.

HENRY B. WARD

UNIVERSITY OF ILLINOIS

THE TENNESSEE ACADEMY OF SCIENCE

THE eighth annual meeting of the Tennessee Academy of Science was held on November 28, 1919, at George Peabody College for Teachers,

Nashville, Tenn., President L. C. Glenn presiding. The program of papers was as follows:

Memorial sketches of Dr. Brown Ayres and Professor Samuel M. Bain, by Dr. C. H. Gordon.

Annual address of the president, "Geography of the North Carolina-Tennessee boundary line," by Dr. L. C. Glenn.

"Recent oil and gas development work in Tennessee," by Wilbur A. Nelson.

"Luck," by Dr. F. B. Dresslar.

"The elimination of errors in a mental maze," by Professor Joseph Peterson.

"Archaeology: new discoveries in the middle south," by W. E. Myer.

"Notes on the early history of the development of the mineral kingdom," by A. W. Evans.

"The feeding of the American army and some civilian applications," by Dr. Lucius P. Brown.

"Some entomological problems," by A. C. Morgan.

"Remarks on the orthoptera of Clarksville, Tenn.," by Henry Fox.

At the conclusion of the president's address a committee was appointed to recommend to the academy at its next meeting the adoption of a general name for the mountains of the Tennessee-North Carolina boundary line, taking into consideration all the different names that have been used and selecting the most authentic. This committee consists of Professor A. E. Parkins, of the department of geography, Peabody College; Dr. C. H. Gordon, of the department of geology, University of Tennessee, and Mr. Wilbur A. Nelson, state geologist of Tennessee.

The election of officers for the ensuing year resulted as follows: *President*, Dr. L. C. Glenn, Vanderbilt University, Nashville, Tenn.; *Vice-president*, Miss Jeanette M. King, Middle Tennessee State Normal School, Murfreesboro, Tenn.; *Editor*, Dr. C. H. Gordon, University of Tennessee, Knoxville, Tenn.; *Secretary-Treasurer*, Roscoe Nunn, U. S. Weather Bureau office, Nashville, Tenn.

ROSCOE NUNN,
Secretary

THE AMERICAN CHEMICAL SOCIETY—

VI

ORGANIC DIVISION

Lauder W. Jones, *Chairman*

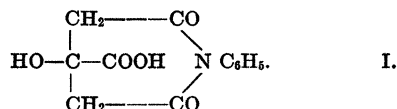
H. L. Fisher, *Secretary*

Cymene as a solvent: A. S. WHEELER.

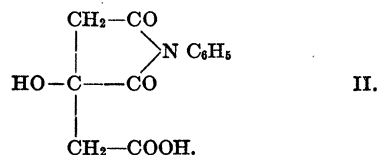
The action of basic reagents on certain Schiff's bases: A. S. WHEELER AND S. C. SMITH.

Structural problems of the aniline derivatives of citric acid: J. R. BAILEY AND E. B. BROWN.

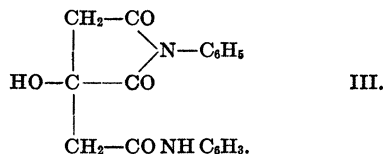
Bailey and Brown show that aniline reacts with methylene citric anhydride giving a product, which readily hydrolyzes with the elimination of formaldehyde and which the method of formation and analysis show to be citranilic acid constituted as follows:



This citranilic acid is a different product from a citranilic acid reported by Pebal,¹ which results from heating the mono-aniline salt of citric acid. With the constitution established for the Bailey-Brown citranilic acid, there remains only the isomeric structure for the Pebal compound, to wit,



This investigation also establishes the constitution of Pebal's "Citrobianil"² as



The anilanilide isomeric with III. can be made from citranilic acid I. The proof of structure of the two aniline derivatives of citric, II., and III., is typical of the theoretical deductions to be made concerning a number of correlated substances, the structures of which prior to the investigation of Bailey and Brown were in doubt. The detailed results of this work, when completed, will be submitted to the *Journal of the American Chemical Society* for publication.

The synthesis of capric acid: G. D. BEAL AND J. B. BROWN.

The action of phosphorus trichloride on ketones and aldehydes: JAMES B. CONANT AND A. D. MACDONALD.

Condensation of acetylene with benzene and its derivatives in the presence of aluminum chloride: OTTO W. COOK AND VICTOR J. CHAMBERS. Benzene, in addition to sym. diphenylethane and traces

¹ Ann., 82, 92 (1852).

² Ann., 82, 87 (1852).